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STATUS OF THE NORTHERN POPULATION OF THE BUTTERFLY, THE WESTERN DARK AZURE (*Ogyris* *otanes*) IN WESTERN AUSTRALIA.

By RAY HART

Hart, Simpson and Associates, 324 Onslow Rd,
Shenton Park, W.A. 6008.

and MICHAEL POWELL

4 Rome Rd, Melville, W.A. 6156.

ABSTRACT

The Western Dark Azure butterfly (*Ogyris otanes*) is included within a species known from scattered sites across southern Australia, including apparently disjunct populations in Western Australia. Prior to this survey the northern form was known only from two sites near Leeman and Dongara and was thought to be rare. This northern form was surveyed and found to occur in four areas spread over 200km along the coast from south of Lancelin to Dongara. It may also occur north and south of this range. It is common in places within its range. It occurs in two areas in the Beekeepers Nature Reserve, and may occur in other conservation reserves. It has been poorly surveyed in the past, and is clearly more widespread and common than previously thought. It is probably secure in several conservation reserves.

INTRODUCTION

The Western Dark Azure butterfly (*Ogyris otanes*) is included within a species known

from scattered sites across southern Australia from New South Wales and Victoria to Western Australia but it was not

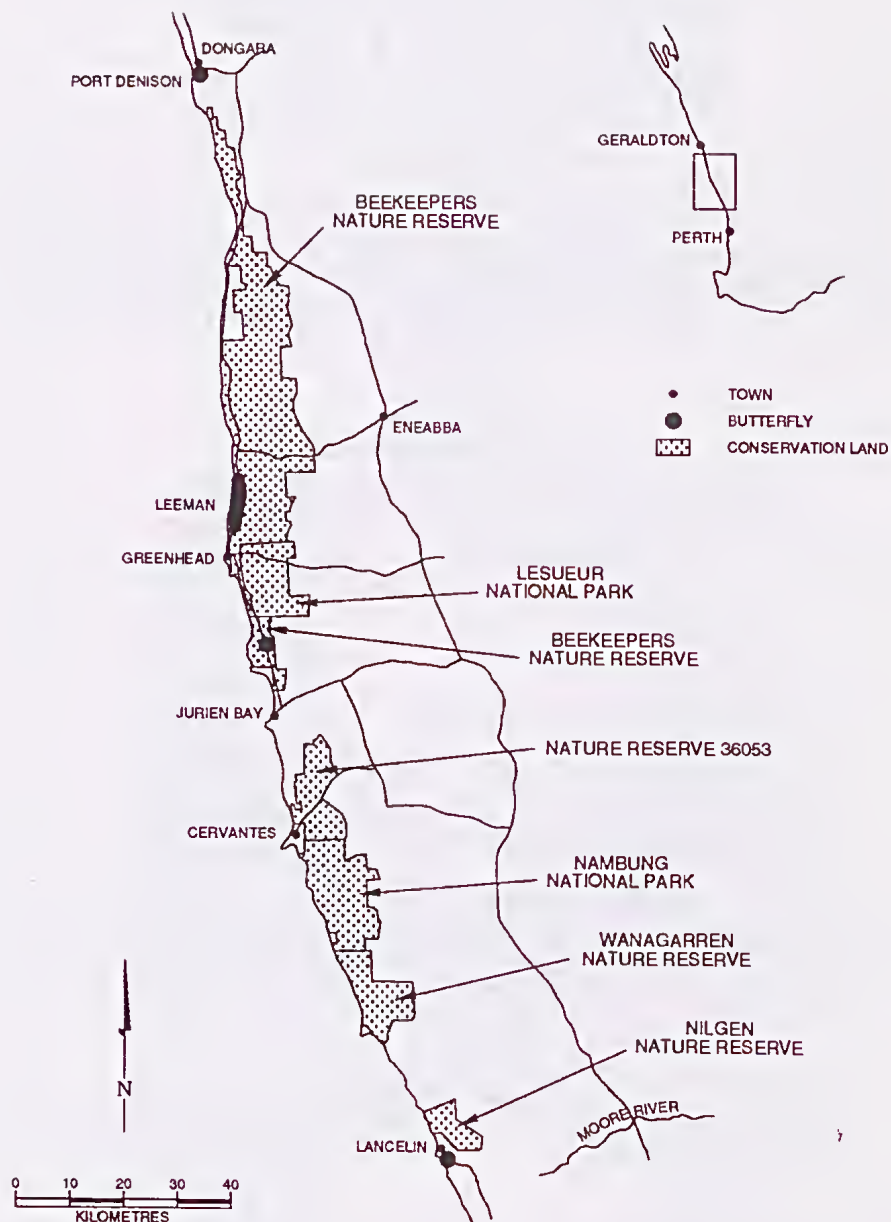


Figure 1. Distribution of the Western Dark Azure butterfly and conservation reserves.

common anywhere (Common and Waterhouse 1981). Subsequently it has been suggested that this species should in fact be divided into a series of subspecies if not species. In particular in Western Australia there are apparently disjunct populations (Edwards pers. comm., Williams pers. comm.). One occurs in the Stirling Ranges and east to past Esperance, and the other was previously known from only two sites, just south of Leeman and just south of Port Denison (near Dongara). The butterfly lives on only one host plant and has a symbiotic relationship with an ant which actively cultivates the caterpillars in return for a sugar secretion. The two populations have different host plants. The northern population is only known to use the leafless shrub *Leptomeria preissiana*. This host plant and the host ant are widespread in the south-west, but the butterflies are not necessarily found in all potential habitat. *Leptomeria preissiana* is found widely over the northern and south-eastern parts of the South-West and into the Goldfields. Griffin (1993) found it to be a common species in his study area of the coast between the Swan and Irwin Rivers, and recorded it as far south as Mandurah and as far north as Shark Bay on the coast.

This butterfly was identified as possibly rare in a regional planning study (Hammond and Elliott 1995). Following concern about the impact of urban expansion on this species around Leeman, 250km north of Perth, a

survey of the status of this species was carried out.

METHODS

The larvae are found only on the host plant when they emerge from the ant nests at night, while the adults are free flying in the day time. The species can be found by catching the adults or by searching for chewed plants and observing the larvae when they emerge at night. It was found that catching the adults was the easier option.

A survey of the butterfly was carried out by Michael Powell and Mark Golding, collectors familiar with the butterfly. The known locations were visited to confirm that the butterfly could be found and captured there. An extensive survey was then carried out from Dongara south to Ledge Point (south of Lancelin) by sighting adults and taking voucher specimens. The sites examined were restricted to those readily accessible by roads, and areas of potential habitat away from roads were not examined. At each site where the butterfly was found the vegetation was described and a photograph was taken. The survey was carried out in late October 1996 in the peak season for butterfly activity. The host plant was flowering at the time of the field work and it was readily visible.

RESULTS

The butterfly was found successfully at the previously

known sites near Dongara and Leeman, although the adults were not easy to catch or observe as they fly rapidly and erratically.

In total the butterfly was found in four areas from south of Port Denison to south of Lancelin (Figure 1). At each site individuals were seen but not often captured. The search was continued at each site until specimens were obtained or it proved impossible to capture voucher specimens.

The butterfly was recorded at the following sites:

Location	Number caught	Others seen (approx.)
1.4km S of Port Denison	2	15
4.5km N of Leeman	2	8
1.3km N of Leeman	4	15
0.4km N of Leeman	0	10
Southern edge of Leeman	3	10
1.9km S of Leeman	2	10
4km S of Leeman	1	10
6km S of Leeman	0	1
6.7km S of Leeman	2	10
16.2km N of Jurien Bay	5	2
1.3km S of Lancelin	2	0
2.6km S of Lancelin	0	1

The survey revealed that the host plant, *Leptomeria preissiana*, was present in all sites. The sites with butterflies were limestone flats behind dunes, low limestone ridges or sand dunes. Some of the flats were seasonally wet. The vegetation was universally dune scrub or heath variously dominated by shrubs of *Acacia rostellifera*, *Melaleuca huegelii*, *M. cardiophylla* and *M. acerosa*. *Allocasuarina lehmanniana* was also a common species, and sedges were often present. The shrubs varied from 1m to 3m in height. Most sites had not been

burnt for some years, but at least one had vegetation which had not reached its full height after fire.

Potential habitat probably occurs along much of the coast from Dongara to Lancelin, but access was limited in many areas and the full extent of the potential habitat could not be mapped in this study. The two previously known sites (south of Port Denison and at Leeman) did not appear to be unusual and were similar to many other sites recorded in this survey.

Voucher specimens from a range of sites covering the distribution of the species have been placed in the collection of the W.A. Museum.

DISCUSSION

The northern form of the butterfly at Leeman was only discovered in October 1977 by D. Knowles at 6.7km south of Leeman and the Port Denison population was found in September 1992 (Williams *et al.* 1995). Its taxonomic position has not yet been decided in relation to the other populations in W.A. and those interstate.

The results of the present survey show that the northern form occurs in four areas between south of Port Denison (29° 17' S) and south of Lancelin (31° 02' S), a distance of over 200km along the coast, and it appears to be common within its preferred habitat. It was also found to be present at precisely the site of the original discovery after 19 years.

The butterfly may also occur further north and south as there is at least potential habitat with the host plant. Beard (1976, 1981) has mapped the vegetation regionally, and his maps show that similar vegetation is widespread from south of Perth to north of Geraldton, and the host plant is even more widespread (Griffin 1993).

There was no apparent unique habitat feature associated with the sites where the butterfly was found. It is likely that the numbers of butterflies are simply a result of the concentration of its host plant, although there may also be temporal variation which would not be revealed by a single survey. Although *Leptomeria preissiana* is widespread over the northern and south-eastern parts of the South-West and into the Goldfields it is not often a common species. The concentrations of plants seen along the coast considered here are unusual within the total range of the species. All sites where the butterfly was found were within a few kilometres of the coast, but the possibility that the butterfly occurs in more inland sites should not be excluded.

The butterfly did not occur in all areas of potential habitat. The presence of the butterfly was also assessed from the chewing on the host plants by the larvae. Sites of apparently suitable habitat with the host plant were found in many areas but with no evidence of the butterfly. It is not known how much the populations vary over time, or what controls the numbers of butterflies. The

adults are fully mobile and it can be expected that they are able to colonise new areas after fires or where new concentrations of host plants appear for any reason. The continued presence of the species at the site of the original discovery after 19 years suggests that this population is not ephemeral.

The butterfly is not easy to observe or catch, and the most reasonable conclusion is that it has been missed by the few collectors who have searched for it in the past. There may also be a limited season when it can be found most readily.

The area where the butterfly occurred around Leeman is a mixture of townsite reserve, Shire reserves and Beekeepers Nature Reserve. It was also found in the Beekeepers Reserve north of Jurien Bay. The Port Denison and Lancelin sites are on town reserves or Shire reserves.

The butterfly occurs in two areas in the very large Beekeepers Nature Reserve and its proposed extensions, and possibly in the un-named Nature Reserve 36053 north of Cervantes, Nambung National Park, Wanagarren Nature Reserve and Nilgen Nature Reserve. None of these latter reserves were examined in the present survey. It may also occur in various other reserves vested in Shires, and on leasehold property.

This butterfly is clearly much more common and widespread than previously thought and is probably secure in several conservation reserves.

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